REMARKS

Status of the Claims

Claims 1 and 3-30 remain pending in the present application, Claim 1 having been amended to more clearly define the present invention, and Claim 2 having been previously cancelled.

Restriction Requirement

The Examiner has acknowledged applicants' election of the clams in Group I (Claims 1 and 3-17) in the response filed on June 10, 2004. However, the Examiner disagrees with applicants' reasons set forth in the traverse, because he believes that the inventions in each of the four groups that he identified are distinct from each other. Applicants continue to respectfully disagree and submit under separate cover, a petition requesting that the Director review the restriction and require that it be withdrawn.

Claims Rejected Under 35 U.S.C. § 103(a)

The Examiner has rejected Claims 1 and 10-16 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6, 342,892 (Van Hook et al., which is hereinafter referred to as "Van Hook"), in view of U.S. Patent No. 6,275, 239 (Ezer et al., which is hereinafter referred to as "Ezer"). The Examiner asserts that it would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the method as taught by Ezer in combination with the method as taught by Van Hook in order to avoid the need for a duplicate memory system. Applicants respectfully disagree for the reasons discussed below.

In the interest of reducing the complexity of the issues for the Examiner to consider in this response, the following discussion focuses on independent Claim 1. The patentability of each remaining dependent claim is not necessarily separately addressed in detail. However, applicants' decision not to discuss the differences between the cited art and each dependent claim should not be considered as an admission that applicants concur with the Examiner's conclusion that these dependent claims are not patentable over the disclosure in the cited references. Similarly, applicants' decision not to discuss differences between the prior art and every claim element, or every comment made by the Examiner, should not be considered as an admission that applicants concur with the Examiner's interpretation and assertions regarding those claims. Indeed, applicants believe that all of the dependent claims patentably distinguish over the references cited. Moreover, a specific traverse of the rejection of each dependent claim is not required, since dependent claims

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1   are patentable for at least the same reasons as the independent claims from which the dependent

2   claims ultimately depend.

3   With regard to independent Claim 1, the Examiner asserts that since Van Hook teaches a

4   vector functional unit that can perform graphics and media operations, and Ezer teaches a texture

5   cache that can store multimedia data, it would have been obvious to one skilled in the art to utilize the

6   method as taught by Ezer in combination with the method as taught by Van Hook in order to avoid

7   the need for a duplicate memory system (Office Action, page 4). In addition, the Examiner asserts

8   that Ezer comprises, as shown in Figure 4, a texture memory that buffers all source image data used

9   for texturing (Office Action, page 4).

10   However, Ezer's texture memory is not equivalent to applicants' texture cache, which is an

11   enhanced texture cache, because Ezer's texture memory only stores the source image data used for

12   texturing and is shared between texture mapping and MPEG video processing (Ezer, column 8,

13   lines 16-36). In contrast, applicants' programmable graphics pipeline retrieves for example, image

14   data, frame data or audio data from memory addresses and stores the retrieved data in the enhanced

15   texture cache (see applicants' specification, page 4, lines 29-31, page 5, lines 1-4, page 5,

16   lines 11-12). Thus, unlike Ezer's texture memory, applicants' enhanced texture cache is not limited

17   to storing a single type of texture data or data for video processing. Instead, applicants' texture cache

18   stores multiple types of multimedia data.

19   Furthermore, assuming, *arguendo*, that Ezer's texture memory were equivalent to

20   applicants' enhanced texture cache, the Ezer and Van Hook references taken together do not

21   suggest the desirability and thus, the obviousness, of making such a combination because the

22   memory that is referred to in Ezer, i.e., common memory unit 103, is not a cache that stores image

23   data, frame data, or audio data, as is the case in applicants' claimed invention. In contrast, common

24   memory unit 103 is a single array of DRAMs used for all of the product memory requirements,

25   such as serving as system and application memory, a display buffer, etc. (Ezer, column 3,

26   lines 39-44) and is more like applicants' memory 36, which is preferably a synchronous dynamic

27   random access memory (SDRAM) (see applicants' specification, page 15, lines 11-14). Thus, the

28   combination of Van Hook and Ezer neither teaches nor suggests all of the elements of applicants'

29   independent Claim 1. Accordingly, the rejection of independent Claim 1 under 35 U.S.C. § 103(a)

30   over Van Hook in view of Ezer should be withdrawn.

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The Examiner has rejected Claims 3-9 under 35 U.S.C. § 103(a) as being unpatentable over Van Hook in view of Ezer and further in view of U.S. Patent No. 6, 104,415 (Gossett). The Examiner asserts that it would have been obvious to one skilled in the art to utilize the method as taught by Gossett in combination with the method as taught by Van Hook and Ezer in order to accelerate minified texture cache access of the computer graphics hardware (Office Action, page 6).

With respect to dependent claim 3, the Examiner indicates that applicants' step(b), which recites a cache area, corresponds to Gossett's texture cache 74, which comprises a table and memory, where the memory stores the data associated with a texture cache 74 (Office Action, page 6). In addition, the Examiner asserts Gossett further teaches that the textures originate from SDRAM 50 and are loaded into format unit 76, which expands or compresses the formats, depending upon the format in which the texture was stored. In addition, the Examiner asserts that a portion of the texture image is loaded into the texture cache, which is the equivalent of applicants' step(a), wherein a line buffer provides multiple read ports for accessing the multimedia data.

However, it does not appear that Gossett teaches or suggests the use of a line buffer. There is no explicit statement of a line buffer in the citation (Gossett, column 12, lines 13-17) that the Examiner has offered. The Examiner appears to imply that loading a portion of the texture image is equivalent to the function performed by a line buffer. However, Gossett never refers to a line buffer and there are other types of memory, besides a line buffer, that can load a portion of a texture image. Even assuming, *arguendo*, that a line buffer is implied in Gossett, it is not clear whether that line buffer is part of a format unit 76, or part of texture cache 74. In contrast, applicants' line buffer is included as part of the enhanced texture cache. Furthermore, even if Gossett does imply including a line buffer as part of the texture cache 74, there is no indication that this line buffer either implicitly or explicitly provides multiple read ports for accessing multimedia data. Therefore, the Examiner's proposed combination of references neither teaches nor suggests all of the elements of dependent claim 3.

In addition to the reasons noted above in regard to traversing the rejection of dependent Claim 3, because dependent claims include all of the elements of the independent claims from which the dependent claims ultimately depend, the rejection of dependent Claims 3-16 under 35 U.S.C. § 103(a) over Van Hook in view of Ezer, and further in view of Gossett should also be withdrawn for at least the same reasons as noted in the traverse of the rejection of Claim 1.

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In view of the amendments and Remarks set forth above, it will be apparent that the claims in this application define a novel and non-obvious invention, and that the application is in condition for allowance and should be passed to issue without further delay. Should any further questions remain, the Examiner is invited to telephone applicants' attorney at the number listed below.

Respectfully submitted,

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